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THE UNIVERSITY OF ALBERTA

SEX ROLE ORIENTATION AND SELF-CONCEPT IN GIFTED ADOLESCENTS

by

JOSEPHINE S. AU-YEUNG TONG (C)

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Sex Role Orientation and Self-Concept in Gifted Adolescents submitted by Josephine S. Au-Yeung Tong in partial fulfilment of the requirements for the degree of Master of Education in Educational Psychology.

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Date Oct. 12th, 1989

DEDICATION

I would like to dedicate this thesis to my mother, who has always believed in me.

ABSTRACT

The present investigation examined the sex role orientation, the self-concept, and the relationship between self-concept and sex role in a sample of 39 (22 males, 17 females) gifted high school students. A control group of 39 students (22 males, 17 females) in the regular program was included for comparison purposes. Two instruments were used, the Bem Sex Role Inventory, and the Piers-Harris Self-Concept Scale. The purpose of the study was to examine the following questions:

1. What are the sex role orientations of gifted adolescents in comparison to their non-gifted peers?
2. What are the levels of self-concept in gifted adolescents in comparison to their non-gifted peers?
3. Is there a relationship between self-concept and sex role orientation? Is this relationship similar between gifted adolescents and their non-gifted peers?

These questions were investigated relative to comparisons with male and female students.

Regarding question 1, no significant difference in sex role orientation between students in the gifted and regular program, nor between female and male students, were found.

Regarding question 2, the results indicated that there was no significant difference in the general self-concept scores

between students in the gifted and regular programs, nor between total male and female students. However, when specific areas of the self-concept measure were analyzed, females were found to have a significantly higher level of anxiety than the males, and regular program students were found to be significantly happier and more satisfied with life than the students in the gifted program. As well, females have fewer problems with behavior than males.

Regarding question 3, a significant relationship between sex role orientation and the self-concept was found for total students. Androgynous individuals were found to score the highest self-concept, followed by masculine individuals, then by feminine individuals, with the undifferentiated scoring the lowest self-concept. This relationship did not differ significantly between regular program students and gifted program students, nor between female and male students.

The results were discussed in relation to the three questions which this investigation sought to answer. Implications for future research were suggested.

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1. INTRODUCTION

In the literature, there are two prevalent viewpoints on the concept of giftedness (Maker, 1986). From one perspective, giftedness is defined by adult productivity, a qualitative difference in kind (e.g. learning differently, developing differently). From the other perspective, giftedness is defined in terms of the learner's difference, a quantitative difference of magnitude and degree (e.g., learning more rapidly, advanced development). In the education of the gifted, one's view of giftedness is important as it has implications for the identification process and program development.

The way particular researchers view giftedness by and large determines the nature of the research questions they ask. Investigations based on conceptual assumptions of giftedness as some form of biological endowment usually focus on identifying early expression of giftedness, and advanced development, especially in comparison with age mates. In contrast, researchers working from the perspective of giftedness as socially and environmentally determined usually select psychologically derived, socially interactive constructs such as interpersonal relationships and self-perception, as their focus of investigation.

In 1972, the United States Office of Education provided a definition of "gifted" which embraced the two perspectives of

giftedness as outlined above. The definition states that: "Gifted and talented pupils are those who, by virtue of outstanding abilities, are capable of exceptional performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school to realize their contribution to self and society." (Marland, 1972, p.2). According to this definition, the focus of educational programs for the gifted should aim not only at increasing creative productive behavior, but also enhancing the self-fulfillment of individual students. This definition has been used by Alberta Education since 1983 (Alberta Education, 1986).

In the past, research on how gifted children differ from their regular normal peers has focused on academic performance and achievements. It is not until recently that more attention has been paid to the impact of social and personality factors on gifted children. The Terman studies (1925-1954) on the gifted successfully dispelled the notion that the gifted are physically weak and socially maladjusted. Since Terman, it has been commonly held that gifted children are better adjusted and healthier than average children. While the literature supports the view that gifted children are at least as well adjusted and as well developed as their average peers, it is also evident that the gifted have many of the problems common to all other children and furthermore may face special problems presented by their giftedness.

Self-perception (e.g. self-concept, self-esteem) as a personality factor of gifted children has been subject to considerable study. The research evidence, however, is equivocal. While some studies suggest that the gifted have a higher self-concept than the non-gifted (O'Such, Havertape & Pierce, 1979; Lehman & Erdwins, 1981; Janos, Fung & Robinson, 1985), others indicate no difference between the gifted and the non-gifted (Loeb & Jay, 1987; Bracken, 1980), while still others show evidence of a lower self-concept for the gifted (Milgram & Milgram, 1976). It is important to recognize that many factors other than giftedness influence self-concept, including age, gender, sex role, and participation in a special program. These factors need to be taken into considerations when conceptualizing the relationship of giftedness and self-concept.

The focus of this research is on the relationship between sex role and self-concept of gifted adolescents. There is little doubt that different attitudes and treatments accorded to girls and boys by society influence their self-concept development. As the male role in our society is more valued, boys are pressured more to conform with the sex role standards (Huston, 1983). Morse and Bruch (1970) considered the sex typing of social roles as one of the major barriers to achievement in gifted females. Silverman (1986) further indicated that incorporating gender role stereotypes into one's self-concept could be detrimental to a gifted girl's confidence in her abilities and competence. The

period of adolescence is especially vulnerable as adolescents face a powerful force to conform to sex role stereotypes.

Recently, researchers have begun to study sex role orientations as predictors of self-concept. Sex role orientations are culturally defined characteristics such as androgyny, masculinity, and femininity. Androgyny is generally perceived as healthy and valuable for success. There are, however, inconsistencies in the literature on androgyny. While androgynous individuals have generally been found to possess higher self-concept scores (Bem, 1977; Spence, Helmreich, & Stapp, 1975), some research findings suggest that only masculinity predicts positive self-concept and self-esteem (Silver & Ryan, 1979; Lamke, 1982).

Such inconsistency in the research literature raises questions with regard to the identification of the gifted in our school system. Given that our society places considerable value on masculine traits, students who demonstrate high masculine traits such as independence, activeness, and assertiveness may fare better than students who do not in programs for the gifted. Also, if masculinity correlates highly with positive self-concept, it follows that gifted students who are more masculine or androgynous will also have a higher self-concept.

The purpose of this research is to determine if there is a relationship between sex role and self-concept in gifted

adolescents. The following research questions are developed:

1. What are the sex role orientations of gifted adolescents in comparison to their non-gifted peers?
2. What are the levels of self-concept in gifted adolescents in comparison to their non-gifted peers?
3. Is there a relationship between self-concept and sex role orientation? Is this relationship similar between gifted adolescents and their non-gifted peers?

These questions will be investigated relative to comparisons with male and female students.

1.1. Definition of Terms

For purposes of this investigation, the following terms are defined:

Adolescence: a period from age 13 through to 18 years during which there are significant cognitive, emotional, and physical changes (Ellis & Davis, 1982).

Gifted: as defined by the U.S. Office of Education (1972) and adopted by Alberta Education (1986) and used by the Edmonton Public Schools. Gifted and talented pupils are those who by virtue of outstanding abilities are capable of exceptional performance. These are children who require differentiated provisions and/or programs beyond the regular school program to realize their contribution to self and society.

The gifted sample in this investigation consisted of students enrolled in the challenge program of an Edmonton high school. Students enrolled in the challenge program are selected based on their academic achievements, recommendations by teachers and school counsellors, IQ tests, and previous identification as gifted in elementary and/or Junior high school.

Self-concept: all the elements that make up a person's view of himself or herself, including self-esteem (Battle, 1982).

Sex differences: biological differences, such as reproductive differences between males and females (Schaffer, 1981).

Sex roles: cultural expectations as to the appropriate behavior of males and females (Schaffer, 1981).

Gender identity: a person's awareness of belonging to one of the two genders (Schaffer, 1981).

Sex role orientation: culturally defined characteristics such as androgyny, masculinity, and femininity (Schaffer, 1981).

Androgyny: has its origin in two Greek words: andros, meaning "man", and gyne, meaning "woman"; and therefore androgyny is a combination of masculinity and femininity (Schaffer, 1981).

2. REVIEW OF THE LITERATURE

Adolescence is a period from puberty to adulthood characterized by rapid physical, emotional, and intellectual changes. Self-concept appears to be an area which researchers have focused upon in attempts to understand adolescence. Investigations of adolescent self-concept development have been extensive. A literature search of Psychological Abstracts since 1974 resulted in over 2,000 studies done on the topic. Compared to this impressive amount of literature on adolescent self-concept in general, little research has been done on the self-concept of gifted adolescents, and even fewer on sex differences in self-concept among the gifted.

This literature review will attempt to cover the relevant research studies as follows:

1. A general overview of the nature of self-concept.

2. A brief summary of research studies on adolescent self-concept, with particular attention to studies on sex differences.

3. A more in-depth look at the relevant literature on self-concept of the gifted and gifted adolescents, and specifically studies on sex differences.

4. A general overview of the literature on sex role orientation of adolescents.

5. A more detailed discussion of sex role studies most relevant to the self-concept of gifted adolescents.

2.1. Self-Concept:

The theoretical issues involved in the development of self-concept have intrigued psychologists for quite some time. Although a major comprehensive theory of self-concept is lacking in the literature, there are three major theoretical assumptions about the nature of self-concept. These are: self-concept is viewed as phenomenological in nature; self-concept is viewed as multi-faceted, having different components; self-concept is developmental.

Phenomenological nature:

Self-concept as an area of research was greatly influenced by the contributions of the phenomenologists (Rosenberg & Kaplan, 1982). A major phenomenological principle which deserves special attention with regard to self-concept formation is the principle of reflected appraisals based on the work of George Herbert Mead (1934). According to Mead, the self-concept is a social product, influenced by social interaction and communication with others. In the process of communication, gestures and vocal symbols are employed. Meaning is constructed when one takes on the role of the other toward his or her own gestures and symbols. Thus in seeing oneself through the perspectives of others, a person begins to see himself or herself as object external to himself or herself, thereby developing a self-concept.

The phenomenological approach seeks to understand the behavior

of individuals from their own point of view, what they actually perceive and feel. Self-concept is viewed as a subjective phenomenon, how a person perceives himself or herself. At the same time, self-concept is also viewed as a social product, greatly influenced by social interaction and social experience.

Multifaceted nature

It is generally accepted that self-concept is multifaceted and has a multiplicity of global and specific components. Shavelson, Hubner, and Stanton (1976) proposed a multifaceted, hierachical model of self-concept. Self-concept is defined as multifaceted, hierachically organized, with the general self-concept at the apex being fairly stable, and becoming increasingly more complex and multifaceted as the individual develops from infancy to adulthood.

Along the same line, Rosenberg & Kaplan (1982) proposed a framework for self-concept analysis which define the constituents of the self-concept as including a complex structure of specific components and dimensions which contain a number of different regions and exist on different planes. These specific components can be studied separately. For example, the component of social identity and its elements such as minority group status, gender, social class, and age may have a profound influence on the shaping of the individual's self-concept.

Piers-Harris (1984) also viewed self-concept as having both

global and domain specific components. Global self-concept reflects how people feel about themselves in general, taking into account their interactions with others, their abilities and physical self-image. Specific aspects of the self-concept can be relatively broad (e.g., academic self, physical self, moral self) or narrow (e.g., good at mathematics). These specific self-evaluations contribute to the global self-evaluation of the individual.

The constructs "self-concept" and "self-esteem" are used interchangeably by most psychologists and educators. To be more precise, however, the self-concept represents the totality of an individual's perception of oneself, while self-esteem refers to one component of this totality (Battle, 1982).

Developmental nature:

As the child develops from infancy to adolescence, the self-concept also develops. Shaffer (1989) provided a summary of the prevailing point of view on the development of self-concept. During infancy, infants do not make clear distinctions between self and others. Around the age of 18 to 24 months, toddlers begin to recognize themselves and form an identity along categories such as age and sex. During the period of early childhood, self-concept is primarily defined in very concrete terms focusing on physical features, possessions, and activities. Parental attitudes and behavior are viewed as very significant in the formation of the self-concept. During middle

and late childhood, the self-concept expands to include a larger arena of social interactions, especially peer relationships and comparisons. Adolescents view themselves primarily in psychological terms and the self-concept becomes increasingly differentiated to include not only personal attributes, but also beliefs, values, and attitudes.

In summary, the construct of the self-concept has several theoretical assumptions. First, self-concept is viewed as subjective and phenomenological in nature. Second, it is multifaceted and includes many components and dimensions. Self-esteem is one component of the self-concept, although the two terms are used often interchangeably by most educators. Third, self-concept develops gradually from infancy to adolescence and beyond, and is influenced significantly by social interactions with others.

2.2. Adolescent Self-concept:

Psychologists have long recognized adolescence as a very special time in which an individual experiences rapid growth and development. G. Stanley Hall (1920) viewed adolescence as the most crucial period in the human life cycle in which a sense of individuality develops within the person. According to Hall, "Adolescence is a new birth, for the higher and more completely human traits are now born. The qualities of body and soul that now emerge are far newer. The child comes from and harks back to a remoter past... suggestive of some ancient period of storm and stress when old moorings were broken and a higher level attained." (p.xiii). In his clinical studies of young people, Erickson (1968) learned to ascribe "a normative identity crisis to the age of adolescence and young adulthood."(p.17). Since Hall and Erickson, maintaining a positive self-concept has been viewed as a major problem facing youth.

There have been conflicting views concerning the stability of self-concept development during adolescence. One major area of research has been influenced by Hall's (1920) and Erickson's (1968) view of adolescence as a period of social, emotional, and personal upheaval. Disorganization of most aspects of adolescent existence, including self-concept, is widely held to be normative.

Another major area of research has been influenced by the views

of Bandura (1975) and Offer (1975) who challenged the concept of "storm and stress" and suggested instead that adolescence is a relatively peaceful and harmonious period. Self-concept is viewed as evolving and slowly changing as the person develops.

Research results have been inconclusive with regard to this debate. Rosenberg (1985) reported studies to support the view that adolescence is a period of considerable turmoil and that self-concept disturbance appears to be most acute during early adolescence. Offer et al (1981) found little evidence to support such a view. Instead, they found that the majority of adolescents cope effectively and develop positive views of themselves. Dusek & Flaherty (1981) in a 3 year longitudinal study conducted with students in grade 5-12, reported that adolescent self-concept is a result of stable continual growth.

While there is considerable debate on self-concept stability, the effect of gender on general self-concept has not been as controversial, although the findings are no less equivocal. Maccoby & Jacklin (1974), in their landmark study on sex differences, summarized the results of approximately 1600 studies done between 1966 and 1973. They concluded that aside from sex differences in four areas (aggression, verbal, visual-spatial, and mathematical abilities) researchers have yet to demonstrate that consistent sex differences exist. With regard to sex differences in self-concept during the school years, they found that on most measures of self-esteem females

show as much satisfaction with themselves as do males.

Nevertheless, there is some evidence which favours the view that adolescent girls score lower on measures of self-concept compared to adolescent boys. Richman, Clark, & Brown (1985) in a study assessing the effects of gender, race, and social class on the general self-concept and area-specific self-esteem of high school students, reported that females are consistently lower in their self-concept and self-esteem scores than males. Barnes & Farrier (1985) in a longitudinal study of self-concept, also concluded that females have a lower self-concept than males. Chiam (1987) investigated self-concept development of Malaysian adolescents. Like their western counterparts, Malaysian adolescent boys were found to score higher on self-concept measures than adolescent girls.

There is some suggestion, however, that females and males differ in the sources for their self-concept. When the global self-concept measures are separated into dimensions such as social abilities, physical abilities and anxiety, sex differences sometimes emerge. Dusek & Flaherty (1981) found that adolescent males score higher than females on achievement/ leadership and masculinity measures of self-concept. Females are found to score higher on the congeniality/sociability measures than males. Rosenberg (1985) reported that during adolescence the self-concept of females is characterized by lesser stability, higher anxiety, and greater vulnerability as

compared to males.

In sum, the study of self-concept development during adolescent years has been dominated by the debate between the theory of adolescence as a time of "storm and stress" and the theory of adolescence as a time of stable and gradual change. This issue has yet to be resolved. With regard to sex differences in self-concept, the conclusion drawn by Maccoby & Jacklin (1974) that results are inconsistent still holds true. Although there is some evidence that adolescent girls have a lower self-concept than adolescent boys, the findings are not consistent. Also, there is some suggestion that girls and boys may differ on various dimensions of self-concept with girls scoring high on social abilities and boys, on achievement.

2.3. Self-concept of the Gifted:

Studies dealing with the self-concept of the gifted do not provide conclusive findings. Some research suggests that the gifted have a higher self-concept than the non-gifted, other studies report that no difference can be found, while still others report that the gifted in a special program might even evidence a lowered self-concept. Studies dealing with gifted adolescents in particular also provide equivocal results. Furthermore sex differences in self-concept are inadequately addressed.

In this part of the literature review, research indicating higher self-concept for the gifted than the non-gifted will be presented first. This will be followed by research indicating no difference or lower self-concept for the gifted than the non-gifted. Then research focusing on the effects of special programming on the self-concept of the gifted will be reviewed, followed by research dealing with gifted adolescents in particular. Finally, studies examining sex differences in self-concept of the gifted will be reviewed.

In the literature there are two common approaches to the study of the self-concept, global and domain specific. Studies using a global approach will be discussed first within each section, followed by studies using a domain specific approach.

Studies indicating higher self-concept for the gifted

Some studies conducted with gifted children have found that they possess a higher self-concept when compared with non-gifted children. O'Such, Havertape & Pierce (1979) investigated the relationship of self-concept and school placement among four groups of children: educable mentally handicapped, educationally handicapped, normal, and gifted. The sample consisted of 128 children, ages 8 to 9 years and 11 to 12 years. The Piers-Harris Children's Self-Concept Scale was used. The results showed that normal and gifted children had significantly higher self-concepts than the educable mentally retarded and educationally handicapped groups, with the gifted scoring significantly higher than the normal group.

Lehman & Erdwins (1981) studied the emotional and social development of the gifted child. Three groups of sixteen children participated in the study: one group of gifted third graders, one group of regular third graders, and one group of regular 6th graders. Self-esteem was measured using the Children's Social Attitude and Value Scale. Results indicated that the gifted children were very well adjusted and their self-esteem was significantly higher than that of the other groups of children.

Janos, Fung & Robinson (1985) focused their research on high-IQ children who report perceiving themselves as being different from their peers, and on their self-concept. Parent

questionnaires and the Piers-Harris Children's self-concept scale were used to collect data. Of the 271 elementary age high IQ children participating in the study, 88 children perceived themselves as being different from others. The self-concept scores of these 88 "different" children were significantly lower than the scores of the children who did not perceive themselves as different. Both groups of high IQ children, however, were found to exceed the self-concept scores of the normative sample for the Piers-Harris scale. A control group of normal IQ students was not included in the study.

Studies focusing on the intellectual domain of the self-concept have also found higher scores for the gifted. Karnes & Whorton (1988) studied the attitudes of intellectually gifted students toward school. 119 high-IQ students, grade 4 through 9, participated in the study. The School Attitude Measure (SAM), which includes two academic self-concept subscales, was used. The results indicated that these students have a more positive self-concept in their academic ability as compared to the normative sample. Again, no control group of students was used for comparison.

Also focusing on the academic domain of gifted children, Li (1988) examined the self-concept and motivational orientation of intellectually gifted children, using Harter's Self-Perception Profile for Children, and Scale of Intrinsic versus Extrinsic Orientation in the Classroom. The gifted sample consisted of 49

children from gifted programs in grade 4 and grade 7, and the control sample consisted of 49 children from the regular program. The findings indicated that gifted students hold a more positive self-concept in the academic/scholastic realm, but no difference was found in the areas of social acceptance, physical appearance or general self-worth.

Studies indicating no difference or lower self-concept for the gifted.

Not all findings, however, reported favorable results for the gifted. Loeb & Jay (1987) investigated the self-concept of gifted children and no significant difference was found between the gifted and the non-gifted control. 125 (60 male, 65 female) students between 9 and 12 years of age, enrolled in fourth through sixth grade gifted programs, participated in the study. These students were selected based on standardized aptitude scores and achievement tests and teachers' recommendations. 102 (46 male, 56 female) students from regular classes served as the control group. Self-concept was measured by the Norwicki-Strickland Children's Locus of Control Scale, the Piers-Harris Children's Self-Concept Scale, and the Q-Sort.

In subsequent gender analyses, gifted girls were found to have a more positive self-concept and a more internal locus of control than non-gifted girls. There was no such difference for boys. Based on the scores on the Q-sort, gifted boys were found to have lower self-satisfaction, particularly in the areas of

physical strength and aggressiveness, as compared to the non-gifted boys. Loeb & Jay concluded that gender may moderate the differences in self-esteem between gifted boys and gifted girls.

Bracken (1980) assessed the attitudes of 78 intellectually gifted elementary school children. Three self-report questionnaires were used to measure self-concept, attitude toward learning, and peer relations. These questionnaires were developed and normed by the Institute for Development of Educational Activities. No control group was included for comparison. Results indicated that the gifted children displayed more favorable attitudes toward learning than did the standardization sample, but did not differ in their self-concepts or peer relations.

In another study, Milgram & Milgram (1976) investigated the self concept of 182 gifted grade 4 through grade 8 students in Israel. They reported that the non-gifted seventh and eighth graders scored higher than the gifted on an Israeli version of the Tennessee Self-Concept Scale. No sex differences were found between boys and girls.

Special Programming for the gifted

Changes in the self-concept have also been studied as they relate to classroom placements of the gifted. Coleman and Fults (1982) compared the self-concept scores of a group of gifted

students at three grade levels (grade 4, 5, 6) who attended a segregated gifted program with a group of high achieving students in a regular program. Ninety students from each group participated in the study. The Piers-Harris Self-Concept Scale was used as measurement. While neither group had low self-concept scores, the scores for the segregated group were significantly lower than those of the high achieving contrasting group. Coleman & Fults attributed the cause of lowered self-concept of segregated gifted students to social comparison. They proposed that in a homogeneous classroom where the abilities of all students are comparable, the gifted children would have a lower self-concept than the gifted children in an integrated classroom. Segregation was thought to impact negatively on self concept of the gifted.

Also concerned with programming for the gifted, Kollof & Feldhusen (1984) investigated the effects of an enrichment program on the self-concept and creative thinking ability of gifted students. 392 students from grade 3 through grade 6 participated in the study. They were selected on the basis of achievement test scores and teacher ratings and were randomly assigned to the experimental and control groups. Self-concept was measured by the Piers-Harris Children's Self-Concept Scale and the ME Scale, and creative ability was measured by the Wallach-Kogan Creativity Instrument. The results indicated that there were no significant differences in self-concept scores for the experimental group students who participated in the pull-out

enrichment program as compared to the control students who did not participate. The experimental group, however, did show significantly higher creative thinking ability scores. The results of this investigation lend support to the idea that enrichment programs for the gifted do not affect their self-concept negatively or positively.

Forsyth (1987) studied self-concept, anxiety, and security of children in self-contained gifted, French Immersion, and regular classes. 134 children from the Halton Board of Education (Southern Ontario) participated in this investigation (Age and grade level of students were not specified in the report). Instruments used were the North York Self Concept Inventory, the Strait-Trait Anxiety Inventory for Children, and the Institute of Child Study Security Test. The girls in the gifted program evidenced the most anxiety, had lower self-concept, and yet felt more secure. The boys in the gifted program also showed higher levels of security than the boys in the French Immersion group, but not different from the other groups in their self-concept and anxiety scores. A trend showed the greatest anxiety and poorest self-concept for the gifted group, and the least anxiety and best self-concept in the regular group. No detailed statistics were provided in this report.

In summary, the research evidence of special programming for the gifted is inconclusive, with studies reporting negative, positive, and no impact on the self-concept of gifted students.

Gifted adolescents

Studies dealing with gifted adolescents in particular also provide inconclusive findings. Tidwell (1980) studied 1,593 gifted grade 10 students from 46 high schools in a large urban California School. All subjects had been identified as gifted by district psychologists and were participants of a special gifted program. Specifically, three instruments were used to measure the general self-concept of the gifted. On the Piers-Harris Children's Self-concept Scale, the gifted sample scored significantly higher than the normative sample. On the Coopersmith Self-Esteem Inventory, the gifted scored equivalent to those of the normative sample. On the Self-Concept as a Learner Questionnaire, the gifted reported themselves as "good" or "very good" learners. Tidwell concluded in her study that the information gathered indicated that gifted high school students in general hold positive feelings about themselves.

Instead of using a global approach to measure general self-concept, Ross & Parker (1980) investigated specifically the academic and social self concepts of the academically gifted. The Sears Self-concept Inventory was administered to 147 fifth through eighth grade students identified as gifted by the Wausau school system, based on intelligence tests and math and reading achievement test scores. Significant higher academic than social self-concepts were found in the fifth grade through the eighth grade for both girls and boys. There were no sex differences

across the academic and social self concept scores.

Kelly & Colangelo (1984) also examined academic and social concepts of 266 junior high students, grade 7 through grade 9. These students were grouped into three groups (Gifted, Special Learners, and Regular) by ability level as determined by scores on intelligent tests, achievement tests, grade point average, parent, teacher, peer, and self-ratings. The Academic Self-concept Scale and Tennessee Self-concept Scale were used to measure academic and social self-concept respectively. Results indicated that only males in the gifted program had significantly higher social and academic self-concepts than their age-mates who were not in the gifted program. No differences were found between the scores of the gifted females and the non-gifted females.

Colangelo & Pfleger (1978) investigated the relationship between self-concept and academic achievement for a group of 151 gifted secondary school students (gr 9 through 12) who participated in the University of Wisconsin Research and Guidance Laboratory Program. The Brookover Self-Concept of Ability Scale (SCAS) was used as the instrument in this study. Results indicated that gifted students have a positive self-concept with respect to their academic abilities. There were no differences for grade and no differences were found between boys and girls.

Schneider et al (1989) examined self-concept and social

relations of gifted students in different classroom settings. Students in Grade 5, 8, and 10 from the Ottawa-Carlton area participated in this study. Subjects were selected from two different classroom settings: self-contained gifted and integrated gifted. Classmates of the integrated gifted served as control. Students were placed in these programs by the School Board based on results of group IQ tests and the Canadian Cognitive Abilities Test. Subjects were asked to complete self-report scales of self-concept and social relations. The instruments used were: Perceived Competence Scale for Children, Self Description Questionaire III, Revised Class Play, Adjustment Scales for Sociometric Evaluation of Secondary-School Students, and Feelings about School. Results indicated that the integrated gifted children at all three grade levels had higher scores for academic self-concept than the other groups. The self-contained gifted reported higher academic self-conept in grade 8. There were no sex differences found in grade 5. But in grade 8 and 10, mean scores were higher for boys than for girls for general self-concept and for perception of physical ability.

Olszewski & Kulieke (1987) examined changes in the various domains of the self-concept of gifted students over the course of a special summer program. Two groups of academically gifted junior high students participated in the study. One program involved 360 students who attended a three-week residential university program. The second program involved 96 students and was a non-residential program, also three weeks in duration. The

Self Perception Profile for Children was used to assess self-concept before and after the program. Parallel results were obtained for both programs. Students showed a shift to a lower scholastic competence, higher social acceptance and higher athletic competence over the program length. Differences were found for males and females in athletic competence and behavioral conduct. Males perceived themselves less well behaved than did the females and perceived themselves more athletically competent than did the females.

In summary, results of studies focused on gifted adolescents are inconsistent. There is some evidence that the gifted have a higher general self-concept when self-concept is measured in a general approach. Also the academic self-concept of the gifted is positive when a domain specific approach is used. However, the findings are difficult to compare as different measures were employed.

Sex differences

Even fewer studies have focused specifically on sex differences in self-concept of gifted adolescents. Leroux (1985), in an ethnographic study investigating the differences between gifted female and male adolescents in secondary school, observed that gifted adolescents are more similar to each other than to members of their own sex, and reported high self-concept for both males and females. 60 grade 12 gifted students from four secondary schools in Windsor, Ontario, particpated in this

study. Identification was based on grade point averages, high degree of talent evidenced in one or more subject areas, and teacher recommendations. The Offer Self-Image Questionnaire was administered, and in addition, questionnaire data were compared with data collected from group interviews and personal interviews. Subjects described themselves as able, creative, and confident. Both males and females possessed positive feelings about their own abilities, their ability to master themselves, and their ability to adjust to the outside world. The results also indicated that gifted females were able to accept roles traditionally occupied by males, e.g., leadership. When leadership was deemed necessary, the gifted females accepted this role as a natural responsibility, and in addition, perceived themselves as capable leaders more often than the gifted males. This finding appeared to support the growing body of literature on androgyny and female self-concept which will be reviewed in a later part of this literature review.

Mills (1984) investigated sex differences in self-concept for mathematically precocious adolescents. Subjects were 166 males and 68 females, ages 12 to 15 years, enrolled in a summer experimental program for talented youth. Subjects were asked to complete, among a battery of self-report tests, the Adjective Check List (ACJ) and the Self-Esteem Checklist to test their self-concept. No differences were found between males and females. Mills did find, however, that high math ability girls possess a lower level of social self-esteem than normal average

math ability girls of the same age.

Davis and Rimm (1985), in their review of the literature on the underachievement of gifted females, note that with respect to self-expectation, females tend to have a lower self-esteem and a lower sense of competence, and attribute failure to the lack of ability.

Eccles (1985) reviewed studies on educational and occupational patterns of gifted men and women. In examining factors which lead to the underrepresentation of women in advanced educational training and high occupational settings, Eccles found little evidence to show that gifted girls are less confident of their abilities than are gifted boys. In her review, Eccles relied on the data gathered by Benbow & Stanley (1982) in a longitudinal study done on mathematically and verbally precocious children at Johns Hopkins University, and the longitudinal data compiled on Terman's gifted population. The results of these studies did not indicate significant self-concept differences in gifted males and females, although clear differences in interests and values were found.

In summary, the literature on sex differences in self-concept of gifted adolescents does not provide conclusive results. While there is some evidence that gifted females have a lower self-concept, some findings suggest that no clear sex differences exist in the self-concept of gifted adolescents.

Summary of Literature on the Self-concept of the Gifted

In summary, although there are some findings which indicate that gifted children show a higher level of general self-concept than the non-gifted, the results are not conclusive. There is some evidence that gifted adolescents hold a more positive concept of themselves in the academic/scholastic realm when a domain specific approach to the investigations is used. Classroom placement is an area of concern. Some studies indicate that segregated gifted program may have a negative impact on the self-concept, others suggest that no effect can be attributed to separate programming. Studies focusing on sex differences and self-concept of the gifted also showed inconsistent findings. It is important, therefore, to recognize that many factors other than giftedness influence self-concept. Factors such as age, gender, and participation in a special program need to be taken into consideration when investigating the self-concept of the gifted.

2.4. Sex Role Orientation:

There is little doubt that different attitudes and treatments accorded to girls and boys by society influence their self-concept development. Our culture places greater status on the male role. Between the ages of 4 and 10, both boys and girls become more aware of the cultural expectations of sex roles and conform to these prescriptions (Huston, 1983). As the male role in our society is more valued, boys are pressured more to conform with the sex role standards. On the other hand, girls are freer to engage in "tomboy" activities at least until puberty when they become preoccupied with their changing body images, and conform to the pressure to be more "ladylike" (Shaffer, 1989). The research literature is replete with studies on sex differences on a variety of topics (Maccoby & Jacklin, 1974). Recent investigations suggest that some of these differences between sexes may in fact be due to sex role socialization than to sex difference (Williams & Anderson, 1987).

Schaffer (1981) made a clear distinction between sex differences and sex roles. Whereas sex differences are defined as "established differences, such as reproductive differences", sex roles are "the cultural expectations as to the appropriate behavior of males and females". Furthermore, Schaffer pointed out that, "sex roles are greatly influenced by physical identity

as male or female, and both biological and cultural influences are involved in determining the appropriate sex roles within a given society." (p.2). A major approach to research on sex roles has involved measuring an individual's masculinity and femininity. Femininity is equated with expressive behavior such as nurturance, sensitivity, and emotionality. Masculinity is defined by instrumental characteristics such as assertiveness, independence, and self-confidence (Schaffer, 1981).

Since the 1970s, there has been a growing body of literature on psychological androgyny advocated by a number of researchers such as Bem (1975) and Spence, Helmreich, and Stapp (1978). The term "androgyny" has its origin in two Greek words: andros, meaning "man", and gyne, meaning "woman"; and therefore androgyny is a combination of masculinity and femininity (Schaffer, 1981, p.41). Some researchers question the bipolar approach implied in a masculinity/femininity distinction, proposing instead the dualistic conception of androgyny as including both feminine and masculine qualities within the individual regardless of biological sex. Instead of studying the differences between male and female, these researchers place their focus on differences in sex role orientation. In this new formulation of sex role research, the traditional masculine/feminine dichotomy is replaced by an expanded four-part typology: androgyny, masculinity, femininity, undifferentiation (Bem, 1975). Whereas androgyny is defined as exceptional development of both masculine and feminine traits,

undifferentiation indicates little incorporation of either masculine or feminine attributes. Although the construct of undifferentiation has been questioned with regard to its usefulness (Hilbrun, 1980), it has generally been accepted on the basis that in theory the constructs of androgyny and undifferentiation are equally viable. Androgynous individuals have generally been found to score highest in self-concept, followed by masculine individuals, feminine individuals, and undifferentiated individuals (Spence, Helmreich & Stapp, 1975; Bem, 1977).

Spence, Helmreich, & Stapp (1975) investigated the relationship between sex role attributes and self-esteem and their results indicated that for both females and males, androgynous individuals have the highest self-esteem, followed by masculine individuals, feminine individuals, and undifferentiated individuals in that order. 248 males and 282 females in an introductory psychology class at the University of Texas participated in the study. Sex role ratings were obtained by using the Personal Attributes Questionnaire (PAQ), and the Texas Social Behavior Inventory was used to obtain self-esteem data. The results led the investigators to conclude that femininity and masculinity may function in an additive way to determine an individual's self-concept.

Bem (1977) in a study to assess the construct of psychological androgyny, also found that androgynous individuals possess a

high level of self-esteem. The BEM Sex Role Inventory (BSRI) was administered to 375 males and 290 females in introductory psychology at Stanford University to assess their sex role orientation. Self-esteem was measured by the Texas Social Behavior Inventory. The pattern of results obtained closely matched that of Spence, Helmreich, & Stapp (1975), with the androgynous individuals scoring high and undifferentiated individuals low on the scale for self-esteem. Further analysis of the data revealed an interesting finding. Whereas self-esteem in women was found to be significantly related to both masculinity and femininity, self-esteem in men was related to masculinity only.

While androgynous individuals have generally been found to possess higher self-concept, some studies suggest that only masculinity predicts self-concept and self-esteem (Silver & Ryan, 1979; Lamke, 1982). Silvern & Ryan (1979) examined the relationship between self-rated adjustment and the Bem Sex-Role Inventory (BSRI). The Miskimins Self-Goal-Other Discrepancy Scale (MSGO) was used to measure self-adjustment. Subjects were 147 undergraduates (76 women, 71 men) enrolled in introductory psychology courses. Superior adjustment was found to be associated with androgynous versus feminine sex roles only among women, not men. Also, adjustment differences among sex-types were accounted for by differences in masculinity, and not femininity.

Lamke (1982), studied the impact of sex role orientation on self-esteem in early adolescence. Subjects were 119 junior high students (70 males, 49 females). They were asked to complete the Rosenberg Self-Esteem Measure, the Bem Sex Role Inventory and the Personal Attributes Questionaire. Results indicated that masculine and androgynous individuals had higher levels of self-esteem than feminine and undifferentiated individuals. However, under separate analysis of masculinity and femininity, only masculinity significantly contributed to self-esteem. Given the inconclusive results found in the literature, Lamke suggested that further research needs to be done with regard to sex role orientation and adjustment. The period of adolescence is especially vulnerable, as the impact of masculinity and femininity on adjustment is critical.

In summary, the literature on sex roles indicates that androgynous individuals may possess a higher level of self esteem than masculine, feminine, and undifferentiated individuals. Some findings, however, suggest that only masculinity relates to high self esteem. This is not surprising, since our society places more value on the male role, and masculine traits are highly rewarded. The literature points to the need for further research in order to understand the relationship between sex role orientations and self-concept.

2.5. Sex Role Orientation of Gifted Adolescents

Two studies were found in the literature on the topic of sex roles and the gifted. Wells, Peltier, & Glickauf-Huges (1982) investigated the sex role patterns of male and female gifted adolescents. Subjects were 138 grade 9 through grade 12 students (75 males and 63 females) who were identified as gifted by school personnel at eleven Wisconsin high schools. The subjects, who ranged in age from fourteen to eighteen were given the Bem Sex Role Inventory (BSRI). The results obtained lent support to the investigators' contention that more gifted female adolescents than males adhere to an androgynous perspective. 28 (44%) gifted females described themselves as androgynous, 6 as (10%) masculine, 18 (29%) as feminine. On the other hand, only 18 (24%) of the gifted males reported androgynous characteristics. Even more interesting is the fact that 37 (49%) of these young men reported as undifferentiated, compared to 11 (17%) of undifferentiated females. No control group was included for comparison. The investigators further indicated that since undifferentiated individuals typically experience low self-concept, there may be a need for counselling in order for these youngsters to fulfill their intellectual and interpersonal potential.

Hollinger (1983) studied the relationship between social self-esteem and sex role orientation of gifted females. The sample consisted of 284 gifted females in their sophomore year

of a metropolitan high school in Cleveland. Each subject completed both the Personal Attributes Questionaire (PAQ) and the Texas Social Behavior Inventory (TSBI). Results indicated that a majority of the students fell into the androgynous and masculine groups (90 androgynous, 76 masculine, 67 feminine, and 51 undifferentiated). Furthermore, gifted females who described themselves as more androgynous had the highest self-perception of social competence and self-esteem, followed by the masculine, feminine, and the undifferentiated groups. This study appears to lend support to the position that both instrumentality (masculinity) and expressiveness (femininity) are central to the gifted females' social self-esteem. Unfortunately, no males were included in this gifted sample for comparision.

In summary, the literature on the gifted and their sex role orientation is very scarce, and the two studies reviewed above appear to support the position that a large percentage of gifted females are androgynous. However, the lack of a comparison group of students in the studies render this conclusion equivocal. More research is needed in this area.

3. SPECIFIC PROBLEMS PRESENTED IN THE LITERATURE

The literature indicates inconclusive findings with regard to the self-concept of the gifted. Several factors may contribute to these conflicting results. First, it appears that there is inconsistency in the definition of "gifted". Some researchers have used IQ and achievement tests as criteria, some have relied on school recommendations, while others have not specified the definition. As a result, it is difficult to make direct comparisons among studies. Second, while the multidimensional nature of the self-concept may not present a conceptual problem, it is difficult to compare studies using the general measures of self-concept with those using the domain specific approach. Third, important variables such as gender, age, and classroom placements of the gifted are often inadequately addressed in most studies. Fourth, some studies have failed to include a control group of comparison students, and instead have used the data obtained from the normative sample of the instrument used. Finally, the research on sex role differences and self-concept is scarce, making it difficult to draw conclusions.

This research will attempt to address some of these issues, specifically the relationship between sex roles and self-concept of gifted adolescents. The general self-concept as well as specific areas of the self-concept will be investigated. A control group of students in the same school will be used for comparison purposes.

3.1. Research questions

The following research questions are developed:

1. What are the sex role orientations of gifted adolescents in comparison to their non-gifted peers?
2. What are the levels of self-concept in gifted adolescents in comparison to their non-gifted peers?
3. Is there a relationship between self-concept and sex role orientation? Is this relationship similar between gifted adolescents and their non-gifted peers?

These questions will be investigated relative to comparisons with male/female students.

Specific hypotheses:

1. Sex role orientation

a. There will be no significant difference in sex role orientation between students in the gifted and regular programs.

b. There will be no significant difference in sex role orientation between male and female students.

2. Self-concept

a. There will be no significant difference between students in the gifted and regular programs in (i) general self-concept or (ii) specific areas of the self-concept.

b. There will be no significant difference between male and

female students in (i) general self-concept or (ii) specific areas of the self-concept.

3. Sex role orientation and self-concept

a. For total students, there will be no significant relationship between sex role orientation and (i) general self-concept or (ii) specific self-concept.

b. For students in the gifted and regular programs, there will be no significant difference in the relationship between sex role orientation and (i) general self-concept or (ii) specific areas of the self-concept.

c. For male and female students, there will be no significant difference in the relationship between sex role orientation and (i) general self-concept or (ii) specific areas of the self-concept.

4. METHOD

4.1. Subjects:

The subjects were 78 students attending grades 10 to 12 in an Edmonton high school (26 grade 10 students, 16 grade 11 students, and 36 grade 12 students).

The gifted sample consisted of 39 students (17 female, 22 male) from the academic challenge program. All students (46 in total) enrolled in the challenge program were invited to take part in the study, and 39 decided to participate. Students enrolled in the academic challenge program are selected based on their academic achievements, recommendations by teachers and school counsellors, IQ tests, and previous identification as gifted in elementary and/or Junior high school. The challenge program is taken for 3 credits (3 hours 20 min per week) to supplement the regular classroom work with special individualized projects. A 5 credit mentorship component is scheduled outside the regular school day.

The control group consisted of 39 students (17 female, 22 male) randomly drawn from the same grades as the gifted subjects in the regular program.

4.2. Instruments

Paper and pencil questionnaires were used. Each subject was asked to complete the Piers-Harris Self-Concept Scale (PH), and

the BEM Sex Role Inventory (BSRI).

The Piers-Harris Self-Concept Scale (1969) is used to measure self-concept. The test consists of 80 statements about the way the child feels about himself or herself (See Appendix 1 for directions for administration and sample statements). Total scores range from 0 to 80. There are six cluster subscales: Behavior, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, Happiness and Satisfaction. The Behavior (BEH) cluster subscale consists of 16 items which measure the extent to which the child admits or denies problematic behaviors. The Intellectual and School Status (INT) cluster subscale consists of 17 items which measure the child's self-assessment of his or her abilities with respect to intellectual and academic tasks. The Physical Appearance and Attributes (PHY) cluster subscale consists of 13 items which measure the child's attitudes concerning his or her physical appearance, as well as attributes such as leadership and the ability to express ideas. Anxiety (ANX) is a cluster subscale of 14 items which measure a variety of specific emotions such as worry, nervousness, shyness, sadness, fear, and a general feeling of being left out of things. The 12 items in the Popularity (POP) cluster subscale measure the child's self evaluation of his or her popularity with peers and ability to make friends. Happiness and Satisfaction (HAP) is a cluster of 10 items which measure a general feeling of being a happy person and easy to get along with, and feeling generally happy with

life. The total raw score cannot be obtained by adding all the cluster scores as some items are scored on more than one cluster scale and also some items are not included on any of the cluster scales.

The test manual (1984) reports 13 studies which have investigated the test-retest stability of the Piers-Harris scale with both normal and special samples. Test-retest reliability coefficients range from .42 to .96 and internal consistency estimates for the total score range from .88 to .93. The Piers-Harris is thus judged to be a reliable instrument.

The BEM Sex Role Inventory (BSRI) Short Form (1978) is used to measure sex role orientation. The BSRI contains a masculine M and a feminine F scale, each consisting of 10 items using a 7-point scale ranging from a "never or almost never true" to "always or most always true." (See Appendix 2 for directions for administration and sample items.) Four sex role orientation categories (Androgynous, masculine, feminine, undifferentiated) are determined using a median split procedure. Individuals whose scores are above the median on the M (masculine) and F (feminine) scales are identified as androgynous. Individuals who score below the median on the M and F scales are categorized as undifferentiated. Above-median M score and below-median F score indicates masculinity. Above-median F score and below-median M score indicates femininity. Bem (1981) reported high reliability scores for internal consistency (coefficients range from .75 to

.87) and for test-retest reliability (coefficient range from .76 to .91). In addition Bem appended a list of twenty-four studies which support the validity of the BRSI.

4.3. Procedure

After parental consent was received, the Piers-Harris and the BRSI were administered in the classroom by the researcher and a teacher in the academic challenge program. The data collection was carried out in May 1989, towards the end of the school year. The Piers-Harris Self-Concept Scale was administered and scored according to the directions provided by the test manual (1984), as was the BEM Sex Role Inventory (BSRI) (Bem, 1981). The "median-split" procedure was followed to determine the sex role classification of each student, as recommended by BEM (1981).

4.4. Analysis of Data

The Statistical Package for the Social Sciences (SPSS) available through Computing Services at the University of Alberta was used for the data analysis. A research consultant from the Department of Educational Research provided consultation for the statistical procedures employed in this investigation.

For hypotheses 1a and 1b on sex role orientation, a chi-square test was used to analyze the relationship between sex role orientations and program (gifted or regular), and between the students' gender and their sex role orientations.

For hypotheses 2a and 2b on general self-concept, a two-way analysis of variance was used to test the gender effect and the program effect (gifted or regular) on the general self-concept of students. For specific areas of the self-concept, a Multivariate Analysis of Variance (MANOVA) was performed to test the effects of program and gender on each of the cluster subscales of the self-concept measure. The MANOVA was followed by univariate MANOVAS since the overall multivariate F was significant (Hummel & Sligo, 1971).

For hypotheses 3a, 3b and 3c on sex role orientation and the general self-concept, a two-way analysis of variance was used firstly to determine the sex role orientation effect on the general self-concept of total students; then secondly to determine the sex role orientation effect and the program effect (gifted or regular) on the general self-concept of students; and thirdly to determine the sex role orientation effect and the gender effect on the general self-concept of students. Mean scores were compared using the Scheffé procedure at both the .05 and .10 levels of significance recommended by Scheffé (Ferguson, 1981). For specific areas of the self-concept, a Multivariate Analysis of Variance (MANOVA) was performed to determine the sex role orientation effect on each of the cluster subscales of the self-concept measure.

5. RESULTS

The results of the study are presented in three main sections corresponding to the hypotheses set up to investigate the sex role orientation of gifted adolescents, the self-concept of gifted adolescents, and whether there is a relationship between sex role orientation and the self-concept.

5.1. Hypothesis 1: Sex role orientation

Hypothesis 1a. There will be no significant difference in sex role orientation between students in the gifted and regular programs.

Table 1 shows the outcome of the BEM sex role classification for total subjects, broken down by program and gender. Table 2a shows the chi-square results for sex role classification of students in the regular and gifted programs. Of 39 students in the regular program, 9 (23.1%) were found to be undifferentiated, 8 (20.5%) were masculine, 10 (25.6%) were feminine, and 12 (30.8%) were androgynous. Of 39 students in the gifted program, 9 (23.1%) were undifferentiated, 14 (35.9%) were masculine, 11 (28.2%) were feminine, and 5 (12.8%) were androgynous. The chi-square was found to be non-significant (χ^2 =4.57, df=3, p=.21). Thus no significant difference in sex role orientation between students in the gifted and the regular program was found and hypothesis 1a was not rejected.

Hypothesis 1b. There will be no significant difference in sex role orientation between male and female students.

Table 2b shows the chi-square results for sex role classification of female and male students. Of 34 females, 5 (14.7%) were undifferentiated, 10 (29.4%) were masculine, 11 (32.4%) were feminine, and 8 (23.5%) were androgynous. Of 44 males, 13 (29.5%) were undifferentiated, 12 (27.3%) were masculine, 10 (22.7%) were feminine, and 9 (20.5%) were androgynous. The chi-square was found to be non-significant ($x^2 = 2.60$, df=3, p=.46). Thus no significant difference in sex role orientation between female and male students was found and hypothesis 1b was not rejected.

Table 1

BEM Sex Role Classification: Incidence and Percentages

		Sex Role				
		U	M	F	A	Total
Regular						
Female	N=	2	5	4	6	17
	%=	11.8	29.4	23.5	35.3	
Male	N=	7	3	6	6	22
	%=	31.8	13.6	27.3	27.3	
Gifted						
Female	N=	3	5	7	2	17
	%=	17.6	29.4	41.2	11.8	
Male	N=	6	9	4	3	22
	%=	27.3	40.9	18.2	13.6	
Total	N=	18	22	21	17	78
	%=	23.1%	28.2%	26.9%	21.8%	100%

Table 2
BEM Sex Role classification
Chi-Square Results

Table 2a. Gifted versus Regular program students

		Sex Role				
		U	M	F	A	Total
Program						
Regular	N=	9	8	10	12	39
	E=	9.0	11.0	10.5	8.5	50%
	%=	23.1	20.5	25.6	30.8	
Gifted	N=	9	14	11	5	39
	E=	9.0	11.0	10.5	8.5	50%
	%=	23.1	35.9	28.2	12.8	
Total		18	22	21	17	78
		23.1%	28.2%	26.9%	21.8%	100%

Chi-square= 4.57 df=3 p=.21

Table 2b. Males versus females

		Sex Role				
		U	M	F	A	Total
Gender						
Female	N=	5	10	11	8	34
	E=	7.8	9.6	9.2	7.4	43.6%
	%=	14.7	29.4	32.4	23.5	
Male	N=	13	12	10	9	44
	E=	10.2	12.4	11.8	9.6	50%
	%=	29.5	27.3	22.7	20.5	
Total		18	22	21	17	78
		23.1%	28.2%	26.9%	21.8%	100%

Chi-square= 2.60 df=3 p=.46

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

E= Expected frequencies

5.2. Hypothesis 2: Self-concept

Hypothesis 2a. There will be no significant difference between students in the gifted and regular programs in:
(i) general self-concept.

Table 3 shows the means and analysis of variance results for Piers-Harris Total scores. Analysis of variance results were non-significant for program ($F= .48$, $df=1$, $p=.50$) and for interaction ($F=1.12$, $df=1$, $p=.29$). Thus no significant difference between students in the regular and gifted program was found and hypothesis 2a was not rejected for general self-concept.

(ii) Specific areas of the self-concept

Table 4a and Table 4b show the means of the Piers-Harris Cluster subscores of Behavior (BEH), Intellectual and School Status (INT), Physical Appearance and Attributes (PHY), Anxiety (ANX), Popularity (POP), and Happiness and Satisfaction (HAP). Table 4a presents the means of program and gender and Table 4b presents the means of gender within program. Table 5 shows the MANOVA results of the Piers-Harris Subscores by program (gifted, regular) and gender (male, female) main effects. The multivariate F was significant for program ($F(6,69)=2.72$, $p=.02$). There were no significant multivariate interaction effects, ($F(6,69)=.50$, $p=.80$).

Since the overall mulitivariate Fs were significant, separate univariate MANOVAS were performed on the self-concept cluster subscores. A significant program effect was found in the Anxiety subscale ($F= 3.63$, $df=1,74$, $p=.06$), with gifted students ($x=8.99$) having a significantly higher level of anxiety than the regular program students ($x=10.36$). A significant program efffect was also found in the Happiness subscale ($F=5.41$, $df=1,74$, $p=.02$). Regular program students ($x=8.54$) were found to be significantly happier and more satisfied with life than the gifted students ($x=7.51$). Thus hypothesis 2a was rejected for the anxiety and happiness areas of the self-concept.

In summary, the results of the analysis of variance for general self-concept indicated that there was no significant difference between students in the gifted and regular programs, and hypothesis 2a was not rejected for general concept. The results of the MANOVAS, however, indicated significant findings in two specific areas of the self-concept. Regular program students were found to be significantly happier and more satisfied with life than the students in the gifted program, and gifted students showed higher level of anxiety than the regular students. Thus hypothesis 2a was rejected for specific self-concept.

Table 3
Means and Analysis of Variance of Piers-Harris Total Scores

		Gender		
		Female	Male	Total
Program				
Regular	M=	60.00	59.27	59.59
	SD=	(10.39)	(11.56)	(10.95)
	N=	17	22	39
Gifted	M=	55.35	59.86	57.90
	SD=	(11.88)	(9.61)	(10.75)
	N=	17	22	39
Total	M=	57.68	59.57	58.74
	SD=	(11.24)	(10.51)	(10.80)
	N=	34	44	78

Analysis of Variance

Source of variation	SS	DF	MS	F	Sig of F
Program	55.85	1	55.85	.48	.50
Gender	68.64	1	68.64	.58	.45
2-way interaction Program x gender	131.55	1	131.55	1.12	.29

Table 4a

Means of Piers-Harris Cluster Subscales Scores: Program and Gender

	Program		Gender	
	Regular	Gifted	Female	Male
	N= 39	N=39	N=34	N=44
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
BEH*	13.58 (2.58)	13.44 (2.40)	14.09 (2.27)	13.07 (2.56)
INT	12.49 (3.03)	13.51 (2.55)	12.71 (2.83)	13.23 (2.84)
PHY	9.18 (3.09)	9.05 (2.44)	9.29 (2.74)	8.98 (2.81)
ANX**	10.36 (3.22)	8.99 (4.04)	8.38 (3.58)	10.66 (3.50)
POP	8.51 (2.66)	8.33 (2.47)	8.12 (2.85)	8.66 (2.31)
HAP	8.54 (2.00)	7.51 (2.05)	8.00 (1.84)	8.05 (2.26)
Total	59.59 (10.95)	57.90 (10.75)	57.68 (11.24)	59.57 (10.51)

BEH*: Higher score means fewer problems.
ANX**: Higher score means lower anxiety.

BEH= Behavior
INT= Intellectual and school status
PHY= Physical appearance
ANX= Anxiety
POP= Popularity
HAP= Happiness and satisfaction

Table 4b

Means of Piers-Harris Cluster Subscales Scores: Gender Within Program

	Regular		Gifted	
	Female	Male	Female	Male
	N= 17	22	17	22
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
BEH*	14.35 (2.60)	13.00 (2.47)	13.82 (1.94)	13.14 (2.71)
INT	12.71 (3.06)	12.32 (3.08)	12.71 (2.69)	14.14 (2.32)
PHY	9.53 (3.02)	8.91 (3.18)	9.06 (2.49)	9.05 (2.46)
ANX**	9.65 (2.94)	10.91 (3.38)	7.12 (3.79)	10.41 (3.69)
POP	8.35 (2.87)	8.64 (2.56)	7.88 (2.89)	8.68 (2.10)
HAP	8.76 (1.03)	8.36 (2.52)	7.24 (2.17)	7.73 (1.98)
Total	60.00 (10.39)	59.27 (11.56)	55.35 (11.88)	59.86 (9.61)

BEH*: Higher score means fewer problems.
ANX**: Higher score means lower anxiety.

BEH= Behavior
INT= Intellectual and school status
PHY= Physical appearance
ANX= Anxiety
POP= Popularity
HAP= Happiness and satisfaction

Table 5

MANOVA Results of Piers-Harris Cluster Subscales Scores by Program and by Gender

	Pillais	F-ratio	DFH	DFE	Probability
Program	0.19	2.72	6	69	.02*
Gender	0.29	4.69	6	69	.00*
Program x Gender	0.04	0.50	6	69	.80

* p<.05

Program Main Effect

	MS	F-ratio	DF1	DF2	Probability
BEH	.74	.12	1	74	.73
INT	15.85	2.03	1	74	.16
PHY	.54	.07	1	74	.79
ANX	44.00	3.63	1	74	.06**
POP	.87	.13	1	74	.72
HAP	22.49	5.41	1	74	.02*

* p<.05 **p<.10

Gender Main Effect

	MS	F-ratio	DF1	DF2	Probability
BEH	19.96	3.27	1	74	.07**
INT	5.21	.67	1	74	.42
PHY	1.93	.24	1	74	.63
ANX	99.42	8.24	1	74	.01*
POP	5.62	.84	1	74	.36
HAP	.04	.01	1	74	.92

* p<.05 **p<.10

BEH= Behavior
INT= Intellectual and school status
PHY= Physical appearance
ANX= Anxiety
POP= Popularity
HAP= Happiness and satisfaction

Hypothesis 2b. There will be no significant difference between male and female students in:

(i) general self-concept.

As seen in Table 3, analysis of variance results were non-significant for gender ($F=.58$, $df=1$, $p=.45$) and for interaction ($F=1.12$, $df=1$, $p=.29$). Thus no significant difference between female and male students was found and hypothesis 2b was not rejected for general self-concept.

(ii) specific areas of the self-concept

As seen from Table 5, a significant gender effect was found ($F(6,69)=4.69$, $p=.00$). A separate univariate MANOVA was performed on the self-concept cluster subscores. A significant gender effect was found in the Anxiety subscale ($F= 8.24$, $df=1,74$, $p=.01$). Females ($x=8.38$) were found to have a significantly higher level of anxiety than the males ($x=10.66$). Also a significant gender effect was found in behavior ($F=3.27$, $df=1,74$, $p=.07$). Males ($x=13.07$) were found to have more problems with behavior than females ($x=14.09$). Thus hypothesis 2b was rejected for the anxiety and behavior areas of the self-concept.

In summary, the results of the analysis of variance indicated that there was no significant difference between male and female students in their general self-concept, and thus hypothesis 2b

(i) general self-concept was not rejected. The results of the MANOVAS, however, indicated significant findings in two specific areas of the self-concept. Female students had a significantly higher level of anxiety than the male students, and males had more problems with behavior than females. Thus hypothesis 2b was rejected for anxiety and behavior areas of the self-concept.

5.3. Hypothesis 3: Self-concept and Sex Role Orientation

Hypothesis 3 a. For total students, there will be no significant relationship between sex role orientation and :

(i) general self-concept.

Table 6 presents the means and analysis of variance results of the PH total self-concept scores for the total students by the four BEM classifications. Analysis of variance indicated the effect of BEM classification was significant ($F=2.98$, $df=3$, $p=.04$). Thus a significant relationship between BEM classification and the general self-concept was found for total students, and hypothesis 3a was rejected for general self-concept. Inspection of the means indicate that androgynous individuals scored the highest self-concept (62.00), followed by masculine individuals (61.50), then by feminine individuals (58.24), with the undifferentiated scoring the lowest self-concept (52.89).

Scheffé comparison of means showed that the mean PH total score of the masculine group and the androgynous group were significantly higher than the mean PH total score of the undifferentiated group, but not different from the feminine group, or from each other. The mean PH total score of the feminine group did not differ significantly from the other groups.

Table 6

Means and Analysis of Variance of Piers-Harris Total Scores by BEM Sex-Role Classification and by Total students.

		Sex-Role Classification				
		U	M	F	A	Total
Total Students	M=	52.89	61.50	58.24	62.00	58.74
	SD=	(10.95)	(10.00)	(12.36)	(7.17)	(10.80)
	N=	18	22	21	17	78

Analysis of Variance

Source of variation	SS	DF	MS	F	Sig of F
Between groups	969.78	3	323.26	2.98	.04*
Within groups	8015.09	74	108.31		

*p<.05

Scheffé Procedure

Mean	SD	BEM	BEM U M F A
52.89	(10.95)	U	
58.24	(12.36)	F	
61.50	(10.00)	M	*
62.00	(17.17)	A	*

* denotes pairs of classification groups significantly different at the 0.10 level.

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

(ii) Specific areas of the self-concept

Table 7 shows the means of the Piers-Harris cluster subscores by BEM classification. Table 8 shows the MANOVA results of the Piers-Harris cluster subscores by BEM classification. The effect of BEM classification was significant for Intellectual and School Status mean scores ($F=5.16$, $df=3,70$, $p=.00$), for Physical Appearance and Attributes mean scores ($F=6.53$, $df=3,70$, $p=.00$), for Anxiety mean scores ($F=4.32$, $df=3,70$, $p=.01$), for Happiness and Satisfaction mean scores ($F=3.91$, $df=3,70$, $p=.00$). Thus hypothesis 3a was rejected for the Intellectual, physical appearance, anxiety and happiness areas of the self-concept.

Scheffé comparison of means indicated that the mean scores of the Intellectual subscale for the masculine group ($x=13.91$) and androgynous group ($x=13.88$) were significantly higher than the mean scores of the undifferentiated ($x=11.50$); that the mean scores of the Physical subscale for the masculine group ($x=9.91$), feminine group ($x=9.29$) and androgynous group ($x=10.18$) were significantly higher than the undifferentiated group ($x=6.94$); that the mean scores of the Anxiety subscale for the masculine group ($x=11.36$) was significantly more positive than the undifferentiated group ($x=8.61$); and that the mean scores of the Happiness subscale for the masculine group ($x=8.82$) was significantly higher than the undifferentiated group ($x=7.00$).

Table 7

Means of Piers-Harris Cluster Subscales Scores by BEM Classification

	BEM Classification			
	U	M	F	A
	N= 18	22	21	17
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
BEH*	13.33 (1.57)	12.73 (3.50)	14.24 (1.55)	13.82 (2.51)
INT	11.50 (2.85)	13.91 (2.33)	12.62 (3.34)	13.88 (2.06)
PHY	6.94 (2.69)	9.91 (2.58)	9.29 (2.74)	10.18 (1.88)
ANX**	8.61 (3.94)	11.36 (2.92)	8.48 (4.29)	10.06 (2.77)
POP	7.56 (2.26)	8.64 (2.46)	8.19 (2.94)	9.35 (2.32)
HAP	7.00 (2.45)	8.82 (1.41)	7.81 (2.58)	8.35 (1.11)
Total	52.89 (10.95)	61.50 (10.00)	58.24 (12.36)	62.00 (7.17)

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

BEH= Behavior
INT= Intellectual and school status
PHY= Physical appearance
ANX= Anxiety
POP= Popularity
HAP= Happiness and satisfaction

BEH*: Higher score means fewer problems.
ANX**: Higher score means lower anxiety.

Table 8

MANOVA Results of Piers-Harris Cluster Subscales Scores by BEM Classification

	Pillais	F-ratio	DFH	DFE	Probability
BEM	0.52	2.36	18	201	.00*

*p<.01

BEM Classification Effect

	MS	F-ratio	DF1	DF2	Probability
BEH	8.85	1.57	3	70	.20
INT	35.51	5.16	3	70	.00*
PHY	41.37	6.53	3	70	.00*
ANX	48.72	4.32	3	70	.01*
POP	8.57	1.31	3	70	.28
HAP	15.72	3.91	3	70	.00*

* p<.01

Scheffe Procedure Results

BEM	Intellectual				Physical				Anxiety				Happiness			
	U	F	M	A	U	F	M	A	U	F	M	A	U	F	M	A
U			*	*			*	*	*				*			
F																
M																
A																

* denotes pairs of classification groups significantly different at the 0.05 level.

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

In summary, a significant relationship between BEM classification and the general self-concept for total students was found. Thus hypothesis 3a was rejected for general self-concept. Inspection of the means indicates that androgynous individuals scored the highest self-concept, followed by masculine individuals, then by feminine individuals, with the undifferentiated individuals scoring the lowest self-concept. Scheffe comparison of means indicate that the general self-concept of the masculine and androgynous individuals were significantly higher than that of the undifferentiated individuals, but not different from the feminine individuals, or from each other.

With regard to the specific areas of the self-concept, a significant difference was found for total students. The MANOVA results of the Piers-Harris cluster subscores showed significant relationship between the BEM classification and four of the six subscales of the Piers-Harris. Thus hypothesis 3a was also rejected for specific areas of the self-concept. Masculine individuals, rather than androgynous individuals or feminine individuals, emerged as the single group who consistently scored significantly more positive than the undifferentiated group on the scales of Intellectual and School Status, Physical Appearance, Anxiety, and Happiness and Satisfaction.

Hypothesis 3b. For students in the gifted and regular programs, there will be no significant difference in the relationship between sex role orientation and :

(i) general self-concept.

Table 9 presents the means and analysis of variance of PH total self-concept scores by program and by the four BEM classifications. Analysis of variance results show no significant program effect ($F=.43$, $df=1$, $p=.52$), a significant BEM classification effect ($F=2.88$, $df=3$, $p=.04$), and no interaction ($F=.51$, $df=3$, $p=.68$). As there was no interaction between program and the BEM classifications on the general self-concept, hypothesis 3b (i) general self-concept was not rejected.

(ii) specific areas of the self-concept

Table 10 shows the means of the Piers-Harris Cluster subscores by BEM classification and by program. Table 11 presents the MANOVA results of the Piers-Harris cluster subscores by BEM classification and by program. The effect of BEM classification was significant ($F=2.36$, $df=18,201$, $p=.00$). The program effect was significant ($F=3.22$, $df=6,65$, $p=.01$), and there was no interaction ($F=1.01$, $df=18,201$, $p=.45$). As there was no interaction between program and BEM classification on the specific areas of the self-concept, hypothesis 3b (ii) specific self-concept was not rejected.

Table 9

Means and Analysis of Variance of Piers-Harris Total Scores by BEM Sex-Role Classifications and by Program.

		Sex-Role Classification				
		U	M	F	A	Total
Program						
Regular	M=	55.78	63.50	57.40	61.67	59.59
	SD=	(12.61)	(10.38)	(13.42)	(7.00)	(10.93)
	N=	9	8	10	12	39
Gifted	M=	50.00	60.36	59.00	62.80	57.90
	SD=	(8.79)	(9.98)	(11.92)	(8.35)	(10.75)
	N=	9	14	11	5	39
Total	M=	52.89	61.50	58.24	62.00	58.74
	SD=	(10.95)	(10.00)	(12.36)	(7.17)	(10.80)
	N=	18	22	21	17	78

Analysis of Variance

Source of variation	SS	DF	MS	F	Sig of F
Program	47.79	1	47.79	.43	.52
BEM classification	961.73	3	320.58	2.88	.04*
2-way interaction Program x BEM	170.66	3	56.88	.51	.68

*p<.05

Scheffe Procedure

Mean	SD	BEM	BEM U	M	F	A
52.89	(10.95)	U				
58.24	(12.36)	F				
61.50	(10.00)	M			*	
62.00	(17.17)	A			*	

* denotes pairs of classification groups significantly different at the 0.10 level.

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

Table 10

Means of Piers-Harris Cluster Subscales Scores by BEM Classification and by Program

		BEM Classification			
		U	M	F	A
		N= 18	22	21	17
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
BEH*	Regular	13.44 (1.81)	13.13 (3.98)	14.00 (1.70)	13.67 (2.81)
	Gifted	13.22 (1.39)	12.50 (3.32)	14.45 (1.44)	14.20 (1.79)
INT	Regular	11.22 (2.91)	13.50 (2.33)	11.40 (4.00)	13.67 (2.10)
	Gifted	11.78 (2.95)	14.14 (2.38)	13.72 (2.24)	14.40 (2.07)
PHY	Regular	7.56 (3.47)	11.00 (2.83)	8.40 (3.41)	9.83 (1.99)
	Gifted	6.33 (1.58)	9.29 (2.30)	10.09 (1.76)	11.00 (1.41)
ANX**	Regular	9.89 (3.55)	11.75 (2.61)	9.50 (4.25)	10.50 (2.28)
	Gifted	7.33 (4.10)	11.14 (3.16)	7.55 (4.30)	9.00 (3.81)
POP	Regular	8.00 (2.78)	8.63 (2.39)	8.30 (3.06)	9.00 (2.66)
	Gifted	7.11 (1.62)	8.64 (2.59)	8.09 (2.98)	10.20 (0.84)
HAP	Regular	8.22 (2.22)	9.75 (0.46)	8.10 (2.96)	8.33 (1.23)
	Gifted	5.78 (2.11)	8.29 (1.49)	7.55 (2.30)	8.40 (0.89)
Total		52.89 (10.95)	61.50 (10.00)	58.24 (12.36)	62.00 (7.17)

BEH*: Higher score means fewer problems.
ANX**: Higher score means lower anxiety.

Table 11

MANOVA Results of Piers-Harris Cluster Subscales Scores by BEM Classification and by Program

	Pillais	F-ratio	DFH	DFE	Probability
BEM	0.52	2.36	18	201	.00*
Program	0.23	3.22	6	65	.01*
BEM x Program	0.25	1.01	18	201	.45

*p<.01

In summary, the results indicated no interaction between program and BEM classification on the general concept, and hypothesis 3b for general self-concept was not rejected. There was no significant difference between regular and gifted program students in the relationship of sex role orientation and their general self-concept.

With regard to the specific areas of the self-concept, the results indicated no interaction between program and BEM classification on specific areas of the self-concept, and hypothesis 3b for specific areas of the self-concept was not rejected. It cannot be concluded that there was a significant difference between regular and gifted program students in the relationship of sex role orientation and specific areas of the self-concept.

Hypothesis 3c: For male and female students, there will be no significant difference in the relationship between sex role orientation and :

(i) general self-concept.

Table 12 presents the means and analysis of variance of PH total self-concept scores by gender and by the four BEM classifications. Analysis of variance indicated a significant BEM classification effect ($F=3.42$, $df=3$, $p=.02$). There was no significant effect of gender ($F= 1.58$, $df= 1$, $p= .21$), nor interaction ($F= 1.86$, $df=3$, $p= .14$). As there was no interaction between gender and BEM classification on the general self-concept, hypothesis 3c (i) for general self-concept was not rejected.

(ii) specific areas of the self-concept

Table 13 shows the means of the Piers-Harris cluster subscores by BEM classification and by gender. Table 14 presents the MANOVA results of the Piers-Harris cluster subscores by BEM classification and by gender. The effect of BEM classification was significant ($F=2.36$, $df=18,201$, $p=.00$). There was a significant gender effect ($F=4.77$, $df=6,65$, $p=.00$), and no interaction ($F=1.31$, $df=18,201$, $p=.18$). As there was no interaction between gender and BEM classification on the specific areas of the self-concept, hypothesis 3c (ii) specific areas of the self-concept was not rejected.

Table 12

Means and Analysis of Variance of Piers-Harris Total Scores by BEM Sex-Role Classifications and by Gender.

		Sex-Role Classification				
		U	M	F	A	Total
Gender						
Female	M=	44.20	58.70	58.09	64.25	57.68
	SD=	(8.41)	(11.94)	(9.94)	(7.03)	(11.24)
	N=	5	10	11	8	34
Male	M=	56.23	63.83	58.40	60.00	59.57
	SD=	(10.14)	(7.81)	(15.15)	(7.07)	(10.51)
	N=	13	12	10	9	44
Total	M=	52.89	61.50	58.24	62.00	58.74
	SD=	(10.95)	(10.00)	(12.36)	(7.17)	(10.80)
	N=	18	22	21	17	78

Analysis of Variance

Source of variation	SS	DF	MS	F	Sig of F
Gender	163.55	1	163.55	1.58	.21
BEM classification	1064.70	3	354.90	3.42	.02*
2-way interaction Gender x BEM	579.89	3	193.29	1.86	.14

*p<.05

Scheffe Procedure

Mean	SD	BEM	BEM U	M	F	A
52.89	(10.95)	U				
58.24	(12.36)	F				
61.50	(10.00)	M		*		
62.00	(17.17)	A		*		

* denotes pairs of classification groups significantly different at the 0.10 level.

U= Undifferentiated
M= Masculine
F= Feminine
A= Androgynous

Table 13

Means of Piers-Harris Cluster Subscales Scores by BEM Classification and by Gender

		BEM Classification			
		U	M	F	A
		N= 18	22	21	17
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
BEH*	Female	12.80 (1.30)	13.60 (3.44)	14.18 (1.66)	15.38 (.92)
	Male	13.54 (1.66)	12.00 (3.52)	14.30 (1.49)	12.44 (2.70)
INT	Female	9.00 (2.83)	13.10 (2.08)	12.72 (2.90)	14.50 (1.41)
	Male	12.46 (2.29)	14.58 (2.39)	12.50 (3.92)	13.33 (2.45)
PHY	Female	5.80 (3.11)	9.40 (2.68)	10.00 (1.79)	10.37 (2.26)
	Male	7.38 (2.50)	10.33 (2.53)	8.50 (3.44)	10.00 (1.58)
ANX**	Female	5.20 (3.03)	10.10 (3.41)	7.27 (3.29)	9.75 (3.01)
	Male	9.92 (3.50)	10.42 (2.02)	9.80 (5.01)	10.33 (2.70)
POP	Female	7.60 (2.30)	7.90 (3.07)	8.09 (2.85)	8.75 (3.28)
	Male	7.54 (2.33)	9.25 (1.71)	8.30 (3.20)	9.89 (0.78)
HAP	Female	5.60 (2.07)	8.80 (1.55)	8.00 (1.73)	8.50 (.93)
	Male	7.54 (2.44)	8.83 (1.34)	7.60 (3.37)	8.22 (1.30)
Total		52.89 (10.95)	61.50 (10.00)	58.24 (12.36)	62.00 (7.17)

BEH*: Higher score means fewer problems.
ANX**: Higher score means lower anxiety.

Table 14

MANOVA Results of Piers-Harris Cluster Subscales Scores by BEM Classification and by Gender

	Pillais	F-ratio	DFH	DFE	Probability
BEM	0.52	2.36	18	201	.00*
Gender	0.31	4.77	6	65	.00*
BEM x Gender	0.32	1.31	18	201	.18

*p<.01

In summary, the results indicated no interaction between gender and BEM classification on the general concept, and hypothesis 3b for general self-concept was not rejected. There was no significant difference between female and male students in the relationship of sex role orientation and their general self-concept.

With regard to the specific areas of the self-concept, the results indicated no interaction between gender and BEM classification on specific areas of the self-concept, and hypothesis 3b for specific areas of the self-concept was not rejected. It cannot be concluded that there was a significant difference between male and female students in the relationship of sex role orientation and specific areas of the self-concept.

6. DISCUSSION

The present study was designed to examine the sex role orientation, the self-concept, and the relationship between sex role and self-concept in gifted high school students. A control group of students in the regular program was included for comparison. Three hypotheses were tested. The results are discussed for each hypothesis as follows.

6.1. Hypothesis 1: Sex Role Orientation

Hypothesis 1a was developed to examine sex role orientation of gifted students in comparison with their non-gifted peers. The results of the analysis found no significant difference in sex role orientation between students in the gifted and regular program. In other words, the pattern of sex role classification of androgynous, masculine, feminine, and undifferentiated gifted students is similar to that of the regular program students. As previous research has yet to examine the comparison of sex role orientation between gifted and the non-gifted, the results obtained in this study should be considered tentative until they are replicated.

Inspection of the frequency distributions in Table 2a suggests a possible trend. Whereas the largest percentage of regular program students was found to be androgynous (30.8%), the largest percentage of gifted program students was found to be

masculine (35.9%). Perhaps this should not be surprising, given that our society places a high status on masculine traits. Gifted students may in fact demonstrate high masculine traits.

Hypothesis 1b was to examine whether female students differ from male students on sex role orientation. No significant difference in sex role orientation between female and male students was found. In other words, the pattern of sex role classification of androgynous, masculine, feminine, and undifferentiated male students is similar to that of female students.

Due to the small sample size (39 gifted and 39 non-gifted), no statistical comparisons between female and male students within programs were drawn. Inspection of the frequency distributions in Table 1 suggests that the results do not appear to lend support to the findings of Hollinger's (1983) investigation which found the majority of gifted females androgynous. In this sample of gifted females, only 11.8% was androgynous, as compared to 41.2% feminine, 29.4% masculine, and 17.6% undifferentiated. As well, the results do not appear to support the findings of Well, Peltier, & Glickauf-Hughes' (1982) study which indicated that more gifted female adolescents adhere to the androgynous perspective than gifted males. Inspection of the frequency distributions indicates that 11.8% of gifted females were androygynous as compared to 13.6% of gifted males. In this study, it does not appear that females were more androgynous than males, gifted or control.

6.2. Hypothesis 2: Self-Concept

Hypothesis 2a was developed to examine whether gifted adolescents differ from their non-gifted peers in their self-concept. With regard to general self-concept, the results of this study found no such difference. In this study, it does not appear that the gifted have a higher or lower general self-concept than their non-gifted peers. The result supports previous research by Loeb & Jay (1987) and Bracken (1980) which found no difference in the general self-concept between the gifted and the non-gifted.

Some previous research found a higher general self-concept for the gifted when compared with the non-gifted. O'Such, Havertape & Pierce (1979) reported higher self-concept scores for the gifted than the non-gifted elementary children on the Piers-Harris. Lehman & Erdwins (1981) found gifted elementary students to have a better self-concept than the non-gifted, using the Children's Social Attitude and Value Scale. That the present investigation studied high school students and found no significant difference in the general self-concept between the gifted and the non-gifted may suggest a possible shift in self-concept during adolescence. This lends some support to the theoretical assumption that self-concept is developmental and undergoes changes at different stages. Other studies which reported positive general self-concept for the gifted (Janos,

Fung, & Robinson, 1985; Tidwell, 1980) had failed to include a control group of non-gifted students, making it difficult to draw comparisons with the present study.

Some of the studies reviewed earlier (Coleman and Fults, 1982; Forsyth, 1987) suggested that gifted students in special programs display a lower self-concept. The results of this study suggest that special programs with the aim of enhancing the achievements of the gifted can be accomplished without affecting the students' general self-concept negatively.

With regard to specific areas of the self-concept, the results appear to be consistent with the theoretical assumption that self-concept is multi-dimensonal, and some domains of the self-concept may be more salient for some individuals than others. It was found that regular program students were significantly happier and more satisfied with life than gifted students. This finding has not been observed in previous research. Also gifted students have a higher level of anxiety than the regular program students. This finding lends some support to Forsyth's (1987) study in which a trend was observed to show a high anxiety level for the gifted group.

Some of studies reviewed earlier (Li, 1988; Karnes & Whorton, 1988; Colangelo & Pfleger, 1978) found that the gifted have more positive concept of themselves in the academic realm, but the present results do not lend support to this finding. In this

study, no significant difference was found in the intellectual aspect of the self-concept between the gifted and the regular program students. Inspection of the means (Table 4a), however, indicates that the gifted scored higher (13.51) than the regular program students (12.49) on the intellectual subscale, suggesting a possible trend.

Hypothesis 2b examined whether female students differ from male students in their self-concept. With regard to general self-concept, the results indicate that no difference was found between female and male students. This lends support to some of the literature reviewed earlier that no sex differences exist in general self-concept (Maccoby & Jacklin, 1974; Leroux, 1985).

Inspection of the means as seen in Table 3, however, suggests a possible trend. Gifted female students were found to have the lowest self-concept (55.35) as compared to regular program female students (60.00), regular program male (59.27), and gifted male students (59.86). This possible trend is consistent with the findings of Mill's (1984) study, and the findings of Davis & Rimm (1985) indicating a lower self-concept for gifted females. In contrast, Loeb & Jay (1987) reported gifted girl to have a more positive self-concept than non-gifted girls in the elementary school. As the present research focused on gifted adolescents, the differences in the findings may again suggest a developmental shift in self-concept during adolescence. As the research examining sex differences in the self-concept of gifted

adolescents is scarce, the results obtained in the present study should be considered tentative until replicated.

With regard to specific areas of the self-concept, it was found that females have a higher level of anxiety as compared to the males. This lends some support to the findings of Rosenberg (1985), indicating a high anxiety level of the self-concept for female adolescents. Inspection of the means as seen in Table 4b indicates that gifted females have the highest level of anxiety, are least popular and least happy, suggesting a possible trend. This is consistent with the concerns expressed in the literature about the lost potential of gifted females (Eccles, 1985; Silverman, 1986). It was also found that females have fewer behavior problems than males. This is consistent with Maccoby & Jacklin's (1974) study which indicated that aggression in behavior is an area where females and males differ. This result also lends support to Olszewski & Kulieke's (1987) study which found males less well behaved than females.

6.3. Hypothesis 3: Sex Role Orientation and Self-Concept

The results of hypothesis 3a indicate that a significant relationship between sex role orientation and the self-concept was found for total students. Androgynous individuals and masculine individuals were found to score the highest self-concept, followed by feminine individuals, with the undifferentiated scoring the lowest self-concept. The finding

lends support to the results of the studies done by BEM (1977) and Spence, Helmreich & Stapp (1975) which found androgynous and masculine individuals scoring siginificantly higher self-concept than the feminine and undifferentiated individuals.

In addition, the results of this study show significant relationship between sex role orientation and four of the six specific areas of the self-concept measure. Masculine individuals, rather than androgynous individuals or feminine individuals, emerged as the single group who consistently scored significantly more positive than the undifferentiated group on the scales of Intellectual and School Status, Physical Appearance, Anxiety, and Happiness and Satisfaction. This is consistent with the findings of BEM (1977), Silvern & Ryan (1979), and Lamke (1982) which support masculinity as a predictor of positive self-concept.

Hypothesis 3b was developed to investigate if there is a significant difference between regular and gifted program students in the relationship of sex role and the self-concept. With regard to general self-concept, no significant difference was found between regular and gifted program students. Regardless of which program the students are in, gifted or regular, the same relationship between sex role orientation and general self-concept as found in hypothesis 3a exists.

With regard to specific areas of the self-concept, the results

indicate no significant difference between regular and gifted program students in the relationship of sex role orientation and specific areas of the self-concept. Regardless of which program the students are in, the same relationship between sex role orientation and specific areas of the self-concept exists as found in hypothesis 3a.

Hypothesis 3c was developed to investigate if there is a significant difference between male and female students in the relationship of sex role and the self-concept. With regard to general self-concept, no significant difference was found between male and female students. Regardless of gender, the same relationship between sex role orientation and general self-concept exists as found in hypothesis 3a.

With regard to specific areas of the self-concept, the results indicate no significant difference between male and female students in the relationship of sex role orientation and specific areas of the self-concept. Regardless of gender, the same relationship between sex role orientation and specific areas of the self-concept exists as found in hypothesis 3a.

6.4. Summary of Major Findings

Major findings of this investigation are summarized as follow:

Sex Role Orientation

1. This investigation found the sex role orientation of gifted adolescents similar to that of their non-gifted peers. In other words, the pattern of sex role classification of androgynous, masculine, feminine, and undifferentiated gifted students is similar to that of the regular program students.

2. It was also found that male and female students do not differ in their sex role orientation. In other words, the pattern of sex role classification of androgynous, masculine, feminine, and undifferentiated male students is similar to that of the female students. The result differs from previous research literature which indicated that gifted females were more androgynous than gifted males.

Self-Concept

3. It does not appear from this study that the gifted have a higher or lower general self-concept than their non-gifted peers.

4. However, when the various aspects of the self-concept are

differentiated, it is evident that some domains of the self-concept are more salient than others. In contrast to previous research, there was no evidence that the gifted have a more positive academic self-concept than their regular peers in this study. Gifted students were found to have a higher level of anxiety than regular program students. Also regular program students were found to be happier and more satisfied with life than gifted students.

5. It was also found that female and male students do not differ in their general self-concept.

6. With regard to specific areas of the self-concept, females were found to have a higher level of anxiety than males. Also females are better behaved than males. This finding is in agreement with previous research.

Sex Role Orientation and Self-Concept

7. With regard to the relationship between sex role orientation and self-concept, androgynous and masculine individuals were found to have the highest general self-concept, followed by the feminine individuals, and the undifferentiated individuals, with the masculine individuals consistently scoring higher than the undifferentiated on the general self-concept as well as four areas of the self-concept. These four areas are Intellectual and School Status, Physical Appearance, Anxiety, and Happiness and

Satisfaction. This finding is consistent with the findings in the literature.

7. Regardless of which program the students are in, gifted or control, the same relationship between sex role orientation and self-concept exists. This is true for general self-concept as well as specific areas of the self-concept.

8. Regardless of gender, the same relationship between sex role orientation and self-concept exists. This is true for general self-concept as well as specific areas of the self-concept.

6.5. Limitations of the study:

There are several limitations of the present study including the following:

1. As in many other studies of gifted children, the identification of the gifted sample in this study relies on a preexisting group of students already selected into the gifted programing based on certain criteria set by a local school or school district. The alternative, administering individual tests and identification measures to each participant, was simply impossible. As a consequence, the results obtained may not be generalizable to other gifted students.

2. The sample used was restricted to one high school in Edmonton, and a sample of only 78 students was obtained. Due to the limited size of the sample and the urban location, the results obtained should be considered tentative until they are replicated with a larger sample from other geographic areas.

3. Although data were obtained in three grades (gr 10, 11, 12), grade was not introduced as an additional variable in the analysis due the limited size of the sample.

4. Also due to limited size of the sample, statistical comparisons between males and females within programs could not be made.

5. No attempts were made to interview the teachers, the school counsellors, the parents, or the students themselves to provide additional information and to cross validate the data obtained from the self-reporting instruments.

6. Only one instrument each was used to measure the constructs under study: the Bem Sex Role Inventory was used to measure sex role orientation, and the Piers-Harris Self-concept Scale was used to measure self-concept. No attempts were made to employ additional intruments to cross validate the data collected. The results obtained should be interpreted with this limitation in mind.

7. As in many other studies using a quantitative design, the cultural context of the school and the home in this study has been left out of the investigation. No attempts were made to observe the students' interactions with teachers, the impact of family and peer relationship, etc. The results obtained were analyzed out of context and should be interpreted with this limitation in mind.

6.6. Implications

The results of the present study highlight two important considerations for gifted programming:

1. The high anxiety level observed in gifted students is an area of concern. Female students appear to be more vulnerable in this aspect of the self-concept. In designing programming for the gifted, this should be taken into considerations.

2. It is observed in the present study that masculinity relates to positive self-concept. In designing programming for the gifted, educators should be conscious of this finding and not overlook those gifted students who do not in particular demonstrate high masculine traits.

The results of the present study also highlight several important considerations for future research:

1. In the literature there are two common approaches to the study of the self-concept in gifted children, global unidimensional versus multidimensional. In this investigation a combined approach was attempted in order to more accurately assess the self-concept of the gifted. The findings suggest that some aspects of the self-concept may be more salient than others, and by assessing only the overall general concept of self, the differentiated evaluations of self may be masked. This

points to the need of a multidimensional approach to future study of the self-concept.

2. Until there is consensus on the most appropriate measures of sex role orientation and the self-concept, it would be advisable to employ more than one measure of sex role orientation and the self-concept in order to cross validate the results obtained.

3. It is also evident that a larger sample from different school districts should be obtained, and future research should use a multi-method approach including interviews, observations, parent and teacher ratings, in addition to self-report measures in order to adequately assess the self-concept and sex role orientation of gifted students. As well, it is important in keep in mind the societal context in which the study is being conducted.

4. This study investigated the self-concept and sex role orientation of gifted students. Several concerns were identified. Females were found to have a higher level of anxiety than males. Also regular program students were found to be less anxious, and were happier and more satisfied with life than the gifted program students. Further research in these areas and other facets of the gifted adolescent's self-concept will be needed in order to understand more the characteristics of gifted students.

5. In the literature, androgyny is viewed as a desirable characteristics. Although there was evidence in this study to support such a view, it was the masculine individuals who consistently compared favorably with the undifferentiated individuals. As the literature on the sex roles of the gifted is very scarce, further research is needed in this area.

6. Finally, longitudinal research on gifted adolescents is needed in order to provide valuable information related to the development of their characteristics and personalities. It is only in this way that researchers can begin to understand further the development of gifted adolescents.

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Appendix 1

The Piers-Harris Children's Self-concept Scale

Directions for administration:

"Here are a set of statements that tell how some people feel about themselves. Read each statement and decide whether or not it describes the way you feel about yourself. If it is true or mostly true for you, circle the word "yes" next to the statement. If it is false or mostly false for you, circle the word "no". Answer every question, even if some are hard to decide. Do not circle both "yes" and "no" for the same statement.

Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside."

Sample statements:

My classmates make fun of me.....Yes No

I am a happy person.....Yes No

It is hard for me to make friends.....Yes No

I am often sad.....Yes No

I am smart.....Yes No

I am shy.....Yes No

I get nervous when the teacher calls on me.....Yes No

My looks bother me.....Yes No

I have good ideas.....Yes No

I am an important member of my family.....Yes No

Appendix 2

BEM Sex Role Inventory

Directions for administration:

"On the opposite side of this sheet, you will find listed a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Please do not leave any characteristics unmarked.

Example: sly

Write a 1 if it is never or almost never true that you are sly.

Write a 2 if it usually not true that you are sly.

Write a 3 if it is sometimes but infrequently true that you are sly.

write a 4 if it is occasionally true that you are sly.

Write a 5 if it is often true that you are sly.

Write a 6 if it is usually true that you are sly.

Write a 7 if it is always or almost always true that you are sly."

Sample characteristics in the Inventory:

Defend my own beliefs

Affectionate

Independent

Sympathetic

Assertive